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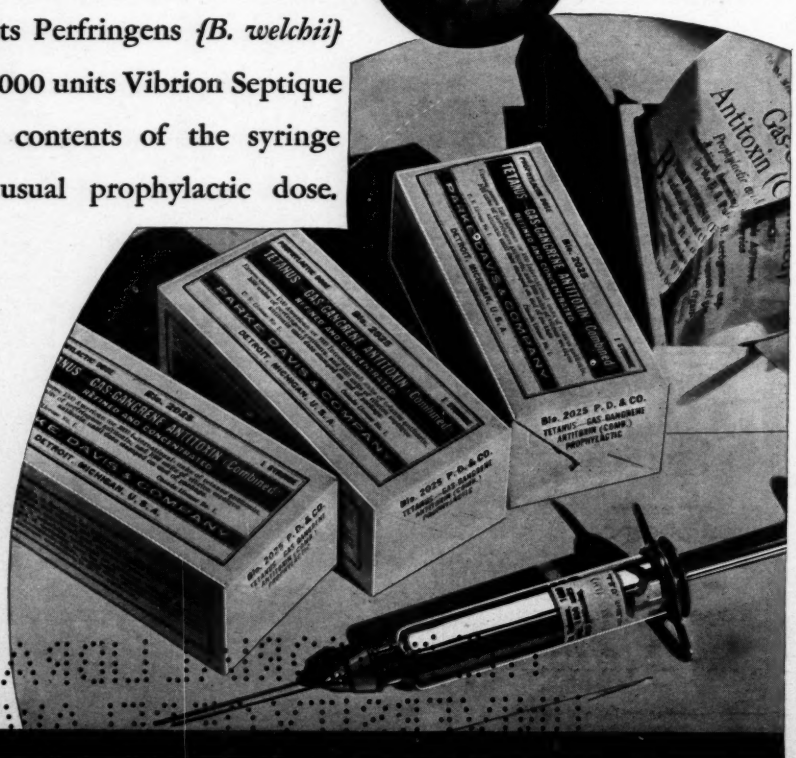
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CONGENITAL SYPHILIS*

MAX J. EXNER, M. D.
New York, N. Y.

The term "congenital" as applied to syphilis is used to denote transmission of the disease to the child before birth, including, however, those probably rare cases in which the infection occurs during birth.

Congenital syphilis is one of the most serious and tragic menaces to human-kind. For the child the possibilities are that he may succumb to the spirochete in utero—perhaps the most fortunate result; that he may die soon after birth or after a miserable existence within the first two years of life; or that he may survive physically or mentally blighted, always with the prospect of late crippling or killing lesions. To the family the syphilitic child often brings the seeds of mental anguish, economic loss, family discord, disruption, or tragedy. The belief of some authorities that about 75 per cent of women bearing syphilitic children have contracted the disease in wedlock suggests that the family significance of the congenital infection is not only that of an ailing or defective child. It cuts at the very basis of marriage and family life. To the State every congenitally syphilitic child is a potential social tragedy, for the greatest asset of the State is its healthy, well-endowed children, and the sound basis of its structure is the happy, harmonious and effective family.

It is now generally regarded as established that in almost all, if not all, cases the infection is transmitted from the syphilitic mother to the child in utero by way of the blood stream, through the placenta. It is a significant fact that syphilis may be transmitted from husband to wife and from mother to child in stages of their disease in which the blood Wassermann reaction is negative. The disease tends somewhere in its course to become latent and to remain so for periods ranging from months to many years without clinical evidence, in which periods the blood Wassermann may be positive or negative or vary between the two. Nevertheless, the male may, during this quiescent stage of the disease, in which he is likely to consider himself cured—if he is aware of his infection at all—infect his marital partner. Pregnancy exerts commonly a powerfully inhibiting effect upon even an acute syphilitic infection in the woman. In many instances the Wassermann reaction in such latency is negative. Yet the disease is potentially infectious as regards the fetus or child.

The duration of syphilis in the mother is probably an important factor in determining infection of the child. The more recent the infection of the mother the more likely it is that the infant will be infected.

The accumulated evidence points to the fact that in the majority of cases the fetus is infected during the latter half of pregnancy. The histologic changes in the placenta are found most frequently after the seventh month, and they have apparently not been described before the fifth month.

It is believed that the period in the pregnancy in which the fetus or child becomes infected, chiefly determines the outcome as to whether a dead or living child is to be born. The earlier in pregnancy the fetus becomes infected, the greater is the likelihood of the child being born dead. It is probable that children born alive, and especially those in whom clinical symptoms of syphilis do not appear for some months, are those infected late in the pregnancy. When the infection reaches the fetus or child in utero, there results quickly a generalized spirochetaemia to the virulence of which the immature tissues and organs offer little resistance. The earlier in pregnancy the infection occurs, the more advanced is the destructive process likely to be at term, if not complete earlier.

Studies among older children show a much lower prevalence than among infants of the

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same social strata, this fact being accounted for probably by the high infant mortality caused by syphilis. In one of the Jeans-Cooke studies of 5,185 infants and children attending an out-patient clinic in St. Louis, syphilis was diagnosed in 2 per cent. When, however, the group was classified according to age, the percentage among the infants was 4.9 and among the older children, 1.5. Stokes states that the incidence of congenital syphilis in the child population as a whole, based upon a wide variety of estimates, ranges from 3 to 5 per cent.

As to the family effects of congenital syphilis, Jeans and Cooke derive the following summary results from their own studies and those by others among families similarly selected:

Approximately 25 per cent of all the pregnancies in untreated syphilitic families resulted in miscarriage or stillbirth. (Doubtless not all caused by syphilis.)

Approximately 20 per cent resulted in living births, the children of which later died.

Approximately 40 per cent of the pregnancies resulted in children who were living and syphilitic at the time of the survey.

Approximately 15 per cent of the pregnancies resulted in children who were living and non-syphilitic.

We will note briefly the early manifestations of congenital syphilis. In congenital syphilis, there is no "primary" stage, as in the acquired form. The infection is generalized from the beginning. The "early lesions" of congenital syphilis which appear in infancy correspond to the secondary lesions of acquired syphilis, and the "late lesions" of congenital syphilis which appear in childhood or adolescence correspond to the tertiary lesions of acquired syphilis. The term "fetal syphilis" is applied to the lesions which develop before birth and are present in stillbirth or in the child at birth.

Most syphilitic infants show no visible evidence of the disease at birth. When it does manifest itself at birth, it usually denotes a virulent infection. Stokes says, "The sooner the symptoms appear the more serious the prognosis." In about two-thirds of syphilitic infants, clinical manifestations appear within the first two months, and in but few cases are they delayed beyond six months. In some cases they may not appear for a year or more. Only rarely do clinical signs appear before the Wassermann reaction in the blood becomes positive.

The lesions of infantile syphilis are chiefly those of the skin, mucous membranes, bones and nervous system. Occasionally the eye is involved. As in the secondary stage of acquired syphilis, so in the congenital form the lesions of the skin and mucous membranes predominate. In addition to these about 20 per cent of patients present bone lesions and about 5 per cent lesions of the nervous system.

After the disappearance of the early skin lesions there may take place a recurrence of lesions of different types, chiefly condylomata, mucous patches, granulomata and papular and serpiginous syphilids. In these lesions spirochetae may be demonstrated.

The manifestations of late congenital syphilis, corresponding to the tertiary lesions of acquired syphilis, are eye lesions, mostly keratitis; neurosyphilis; bone and joint syphilis; gummata and deafness. They occur mainly, though not exclusively between the ages of two and fifteen.

Interstitial keratitis is by far the most frequent of the late lesions, associated often with iritis and chorioretinitis and other pathologic conditions of the eye. In the St. Louis group, 63 per cent of the children over five years of age with clinically active syphilis had keratitis. In the majority of cases the condition is bilateral.

Syphilis of the joints occurs at all ages, but most frequently between the ages of five and ten. The knee is the joint most frequently involved and when it is, the condition is in most cases bilateral.

Bone syphilis is chiefly of two types: The most common is osteoperiostitis, a diffuse hyperplastic process. Less common are localized gummata. The most characteristic feature of osteoperiostitis is a diffuse thickening of the periosteum and gradual thickening of the underlying bone. The saber shin, one of the common stigmata of congenital syphilis, illustrates the result of this inflammatory process. Frequently, the condition is accompanied by pain which tends to be more severe at night.

Gummata also are most common in the tibia. In contrast to the hyperplasia of osteoperiostitis, gummata are destructive lesions, sometimes to the extent of causing pathological fracture. They tend to ulcerate to the surface. The

process is decidedly chronic and resistent to treatment, producing some of the most persistently Wassermann-fast cases.

Gummata of the soft parts occur much less frequently. They are located most often about the nose and throat.

Deafness in syphilitic children is relatively uncommon. It is found most frequently between ten and fourteen years of age. It occurs much more frequently in females than in males. The condition is always bilateral. When deafness has become total, the condition is permanent.

Among all the manifestations of late congenital syphilis, neurosyphilis is by all odds the most important. By the time neurosyphilis is clinically recognizable, the damage already done is usually irreparable.

It is to be assumed that in the early general spirochaetemia which occurs in every syphilitic infection by way of the blood stream, spirochetae reach the nervous system. Yet not all syphilitic individuals develop neurosyphilis. What factors determine the localization is not yet understood. It is true, however, that active syphilis in one part of the body tends to inhibit activity in other parts. Patients with manifest neurosyphilis frequently have little evidence of syphilis elsewhere, and vice versa.

Some present-day authorities believe that involvement of the nervous system in hereditary syphilis is more frequent than many accounts would indicate.

A much greater prevalence of neurosyphilis in white children as compared with Negro children is noteworthy. In adult neurosyphilis similar preponderance of incidence among whites as compared with Negroes is found. Whatever other factors may enter in to influence the localization, it is difficult to escape the conclusion that there exists a definite predisposition to neurosyphilis in the white race.

Infants with neurosyphilis do not always show a positive spinal fluid Wassermann in the early months of life. The positive reaction may at times be delayed until after the third month. In general the conclusion seems to be justified that the involvement of the nervous system, in children with congenital syphilis, occurs during the early spirochaetemia *or not at all*. This fact is important in its bearing on diagnosis, prognosis and treatment.

Some authorities of today believe that all neurosyphilis begins as a vascular process. Since the infection occurs by way of the blood stream the early lesions are in and about the blood vessels of the meninges. From these sites the infection tends to progress into the parenchyma of the brain and nervous tissues. Motor paralysis and mental deterioration are usually the most prominent indications. Meningitis, hydrocephalus, convulsions and the various forms of paralyses and epilepsy are the conditions most commonly described.

Optic atrophy due to syphilis may occur any time in childhood, though this lesion is rare.

In addition to these more or less localized lesions, a more diffuse degeneration of the cortex often occurs in which the clinical manifestations are chiefly mental. Syphilitic dementia and paresis are common classifications. Tabes dorsalis occurs but it is a relatively infrequent manifestation of congenital neurosyphilis. No detailed treatment of the various types of neurosyphilis can be undertaken in this paper.

Latency of the infection in congenital syphilis undoubtedly occurs much more frequently than is generally suspected. The actual incidence could be determined only by routine blood examinations, which few are making. Apparently few infections in young children are being diagnosed except those with manifest lesions. In the St. Louis series more than half of the syphilitic children beyond infancy manifested no signs of clinical activity when the child was first seen. Practically all syphilitic infections in children become latent at some period during the disease and the period of symptom-free latency may continue for a number of years.

Many children with latent congenital syphilis, as well as those with active lesions, manifest the "scars" of earlier syphilitic activity known as stigmata which, while not all strictly pathognomonic, render the case highly suspicious. The stigmata appear mostly in later childhood. Hutchinson's teeth, the mulberry molar, rhagades and the saber shin are the most definitely pathognomonic of syphilis.

While laboratory tests must be relied upon to confirm the identification of congenital syphilis, the recognition of the clinical signs remains of the utmost importance. The more common ones have been sketchily reviewed. The prevalence of latent stages in the parents suggests

that not too much emphasis be placed upon securing a history of syphilis in the parents. A history of syphilis in one member of the family calls for Wassermann tests upon all the members. While in many cases the clinical manifestations of congenital syphilis are almost unmistakable, they may at times be confused with non-syphilitic affections, hence the diagnosis must be confirmed by laboratory tests. In neurological involvement the laboratory tests must be almost wholly relied upon. Fortunately in such cases the blood Wassermann is almost always strongly positive, and when it is not, the spinal fluid will show the characteristic changes. Indeed, strongly positive Wassermann reaction is generally characteristic of untreated hereditary syphilis, and the reaction does not tend to become weaker or spontaneously negative during childhood as it tends to do in syphilis of the adult. In the first two months of life syphilitic children may give negative reaction, the fixing substances not yet having developed in the blood, and non-syphilitic infants may give a positive reaction, the fixing substances from the blood of the syphilitic mother being transmitted to the healthy infant through the placenta. After two months syphilitic infants will usually give positive reactions and non-syphilitic infants negative reactions. In congenital syphilis the positive blood reaction tends strongly to persist even during prolonged and intensive treatment, in contrast to acquired syphilis in the adult in whom the blood reaction is much more amenable to modification.

The prognosis of congenital syphilis is most grave in infancy. The disease seems to cause a decreased general resistance to pyogenic infection, hence many die from secondary intercurrent infection. In older children the mortality is confined mainly to those having neurosyphilis.

Clinical symptoms usually disappear promptly under adequate treatment, with the exception of certain neurological cases, and of interstitial keratitis and arthritis which may give way slowly. It has been already stated that once clinical signs of damage to the nervous system have appeared, even adequate treatment is not likely to do more than arrest its further progress.

Space forbids any detailed discussion of treatment of congenital syphilis. The drugs employed are the same as those used in the treatment of syphilis in the adult, namely, the arsenicals together with mercury, bismuth and the iodides. While possibly less active a drug than arsphenamine and neoarsphenamine, sulpharsphenamine has come into favor in the treatment of congenital syphilis because of certain advantages. It is easily prepared for injection; it can be given intramuscularly or subcutaneously; it is comparatively non-irritating when so given; and in solution it is the most stable of the arsenicals. Tryparsamid, while of low spirilicidal action, is of advantage in cases of neural involvement because of its greater power to penetrate the nervous system. It may be given intramuscularly or intravenously, the latter route being preferable. The drug is to be used only supplementary to other antisyphilitic treatment.

While the courses of treatment of congenital syphilis adopted by various authorities have certain fundamental ideas or principles in common, each has his own modifications based upon his experience and convictions. As an example of a treatment regime based upon long and wide experience we present that of Jeans and Cooke.

A. *Routine Treatment for Ordinary Cases.* Especially in infants with early syphilis.

1. Mercuric chloride intramuscularly once weekly.
2. Sulpharsphenamine once weekly during the first three weeks of course.

In late congenital syphilis or in Wassermann-fast cases, the following additional bismuth therapy is added:

3. Bismuth intramuscularly once weekly during the last six weeks of course.

The sulpharsphenamine is given on the same day as the first three mercury injections and the bismuth simultaneously with the last six doses of mercury.

B. *Intensive Treatment Given at Intervals.* This is intended particularly for patients who cannot maintain continuous treatment because they reside at a distance and are able to report for therapy only at intervals. It consists of the following:

1. Sulpharsphenamine every second day for three doses.
2. Bismuth or bichloride of mercury intramuscularly co-incidentally with the first and third sulpharsphenamine treatments.

This routine is repeated every six to eight weeks and in the intervals mercury by mouth is prescribed.

C. *Tryparsamid Treatment for Late Neurosyphilis.*

1. Sulpharsphenamine once weekly for the first three injections.
2. Tryparsamid once weekly for the next six weeks.
3. Mercuric chlorid or bismuth intramuscularly each week during the course, the two drugs being employed in alternate courses.

It will be of interest to note the treatment results accomplished during a ten-year period by Jeans and Cooke, employing essentially the treatment regimes just described.

Of the group of 401 infants with congenital syphilis under one year of age, 125 received treatment for six months or more. Of these 90 remained cured at least three years; 35 were not serologically cured.

Of the group of 542 children over one year of age, 66 received treatment more than six months but less than a year. Of these 8 were cured and 58 were not serologically cured. Of the one hundred and ninety-three who were treated more than a year, 85 (44 per cent) were cured; 108 were not serologically cured. These data throw forceful emphasis upon early and adequate treatment. The earlier treatment is begun the more favorable is the prognosis. Delay of treatment into the second year of age very greatly diminishes the chances of recovery. Jeans and Cooke say, "A minimum of nine months of treatment (four courses) for infants and twice that amount for older children is advisable. After clinical and serological cure, the child should have a physical examination and blood Wassermann test every six months for several years."

Schamberg and Wright say, "Certain it is that treatment of syphilis in a child should begin as soon as the disease is discovered. This treatment should be continued vigorously until there are no signs or symptoms of the disease and until the Wassermann reaction is persistently negative. After this, treatment need not be intensive, but should be continued at intervals until the child is fully grown."

It is highly appropriate and urgent that in any discussion of congenital syphilis the major emphasis be placed upon prevention. The problem of preventing congenital syphilis is really a simple one. The means and skill for its accomplishment are within our hands. There is no phase of preventive medicine which we can approach with greater confidence or in which we may achieve more dramatically striking results. It is wholly a question of early diagnosis and prompt and adequate treatment. If the diagnosis of syphilis in the pregnant woman can be made early and treatment begun by the middle of the period of pregnancy, a non-syphilitic child can be assured in almost all cases. Treatment is now rather generally available. There is nothing in pregnancy normally to contra-indicate antisyphilitic treatment. Indeed, pregnant women tolerate it exceptionally well. Often a moderate amount of treatment serves to protect the child.

Dr. Laurent, at St. Etienne, France, has interesting data on 213 women studied before and after they had treatment. Of the pregnancies occurring without treatment, 73.5 per cent terminated fatally for the child; 26.5 per cent were alive at three months. Of those alive, it is probable that at least half will die in the first five years and that of those surviving infancy, only a few will be apparently normal.

With treatment, the pregnancies of these same women terminated in a result that stands in impressively striking contrast. Nearly 92 per cent were alive at three months; only 8 per cent terminated fatally for the child. And of those alive, it is probable that all will be healthy, non-syphilitic children. These results are but typical of those achieved by all who apply modern methods of diagnosis and treatment of syphilis in pregnancy.

The failure to diagnose syphilis in pregnancy is the outstanding shortcoming that blocks our full possible achievements in this aspect of preventive medicine. Obviously the problem calls for a blood test—Wassermann, Kahn or other recognized test—upon all pregnant women in hospitals, prenatal clinics *and in private practice*. The certain diagnosis of syphilis in pregnancy is quite impossible without the blood test. In 14 studies of a total of 58,000 unselected cases in 30 clinics there was revealed the presence of syphilis ranging from 3 to 23 per cent. These and similar data abundantly justify the routine blood test upon women in prenatal clinics.

The greatest reluctance to application of the blood test to all pregnant women is found among the private practitioners. This is the sector in the battlefront in which the conquest of this public health menace chiefly halts.

We cannot take time to discuss antisyphilitic treatment of pregnant women in detail. It does not differ essentially from modern modes of treatment of syphilis in general. The arsenicals together with the heavy metals are used, their combinations and proportions being varied according to the time treatment is begun and to other needs of the patient. If treatment is begun late, a maximum proportion of the arsenicals early is called for. While treatment in all cases should be vigorous, it should not and need not be excessive, remembering that the kidneys are already carrying extra burdens in pregnancy.

The opportunity to prevent congenital syphilis with all its terrible consequences to the individual, the family and society is within the grasp of the medical profession. Will we measure up to the commensurate responsibility which this fact implies?

DISCUSSION

DR. JOSEPH W. BASTIAN (Wilmington): I would like to emphasize the importance of clinical diagnosis. When I studied medicine we didn't have laboratories, and we didn't have a Wassermann, but we often diagnosed syphilis, where it is missed today by the younger men who depend upon possible Wassermanns. Along that line, you will find a great many younger men unable to diagnose typhoid fever until they can get a laboratory test. I wish we could impress on them the importance of closer clinical observations, so as to be able to get hold of these cases in time and treat them adequately.

I think that the time of treatment for syphilis is entirely too short. When "young" boys like Dr. Tomlinson and I were studying medicine we were taught to treat it for three years, and I have seen that demonstrated quite frequently in cases which would show a negative Wassermann and to all appearances be well, and then five or ten or fifteen years afterwards develop some marked evidence of syphilis, by which time it had made such advances that that treatment was of no avail.

Another thing that I am strong on in the treatment of syphilis is our old mercury and iodide. I believe that the greatest importance of a lot of these arsenical preparations, the newer ones particularly that are brought out, is to make money for the manufacturers. Some nice, free-talking detail man comes in with a little bit of literature, with somebody's name on it in Europe, maybe Sweden or Germany or France, and tells about some combination of arsenic that he is using, cites chemical equations that are different from what we are using, and what wonderful things the new preparation will do. We jump in and try that new one for a while.

The next year another fellow comes along with another one. After all, if you will go to your arsenic for your earlier treatments, and follow it up with mercury and iodides, you will have results fifty years from now that some of the others do not have.

PRESIDENT HOCKER: Any other discussion on Dr. Exner's paper?

DR. BRICE S. VALLETT (Wilmington): I would just like to re-emphasize the importance of a Wassermann test in all pregnant women. I think that is a very important part of Dr. Exner's paper.

PRESIDENT HOCKER: Any further discussion?

DR. E. R. MAYERBERG (Wilmington): Mr. President, Dr. Exner mentioned interstitial keratitis. That is a condition that is rather frequent. We pick up cases in our clinics occasionally with haziness of the cornea, and the diagnosis is missed. A lot of these kiddies run around for months without proper treatment, because the practitioner who has seen them has not associated the condition with syphilis.

We know that it is one condition that occurs in congenital syphilis. The reason the diagnosis is missed a lot is because this condition is attended very often without inflammatory changes. All of these cases do not have iritis. Sometimes in the early stages they develop an iritis, with a conjunctivitis, that subsides in a short time. Then the cornea becomes hazier and gradually becomes very dense.

The haziness of the cornea is due to a round-celled infiltration between the layers of the cornea. We stain the cornea. We do not find an ulceration. We do in a lot of cases find some roughness of the corneal surface, but most often

we do not. As I say, the haziness is due to a round-celled infiltration. It involves one eye first. I have yet to see a case that didn't have the second eye involved sooner or later, sometimes during the course of the treatment, sometimes months after the treatment has been started.

I have also seen these cases where the inflammation has been very violent, so much so that we have a network of vessels creeping from the limbus over towards the center of the cornea, and when that condition arises we usually have permanent impairment, because those vessels do not always disappear. Under proper treatment over an extended period of time—sometimes covering a year or more—these cases will almost completely recover. I say "almost completely recover." I believe all of these cases have some permanent haziness of the cornea afterwards.

In my mind, the proper treatment for these cases is not the salvarsan or arsphenamine or any of the arsphenical preparations. I have found that the best treatment is the old mixed treatment of mercury and iodide. I do not mean a little bit of iodide. I mean mercury and unctions—the old-fashioned mercury and unction—a half drachm or a drachm rubbed into the skin every day. I usually instruct my patients to use one shoulder for one application, and then the opposite shoulder the next day, and then a thigh, and then another thigh, and just keep up that circuit: it keeps the skin from getting sore. It takes about a half or three-quarters of an hour for the patient to rub that ointment into the skin. The patient should do the rubbing herself if old enough. Even a six or seven-year-old child can be taught to do that. They not only absorb from the part they are rubbing the salve into but they absorb from the palm of the hand which they use to rub it in.

Then I give iodide, starting with very small doses, using the ascending treatment method. With young children I start with a saturated solution of potassium iodide, giving one to two drops to start with, and increasing one drop each day. I have a child six years old under treatment at the present time, and that child is taking 20 grains of potassium iodide three times a day. She has been under treatment for some time. When I prescribe the iodides, I caution the parents to look out for the running nose and the watery eye, etc. If that occurs, we do not discontinue the iodide; we lessen the dose.

That treatment should be continued until the cornea is clear, or as clear as you think it can be, and then the Wassermann should be taken at frequent intervals, six-month intervals, and the treatment should be continued if the Wassermann still is positive.

These cases recur. I have never seen a case of interstitial keratitis that did not recur in anywhere from two to three or five years. When it does, it is worse than it was originally. These cases, I believe, eventually wind up with a great impairment of sight.

That sort of story serves to emphasize just what Dr. Exner has brought out: diagnosis before these children are born. Treat the mothers and prevent syphilis, rather than try to cure it after we have it.

PRESIDENT HOCKER: Is there any further discussion of Dr. Exner's paper?

DR. PETER W. TOMLINSON (Wilmington): One thing I have never known is when to stop the anti-syphilitic treatment. I have a case in mind where for two years after the initial lesion the man was kept under treatment. Fifteen years later, during which time he was in perfect health, he went to pieces nervously and died inside of three months.

I wrote his physician to know (I did not know of this history until after I did write to his physician) if there was a luetic history. He told me that fifteen years before he treated this man for the initial lesion, and kept him under treatment for two years and thought he was absolutely relieved of the disease. Fifteen years later, however, he went out very quickly.

PRESIDENT HOCKER: Is there any further discussion?

(No further discussion was forthcoming.)

PRESIDENT HOCKER: Dr. Exner, do you have something to say in conclusion?

DR. EXNER: No, except to say that all modern authorities agree that the combination of the use of the arsenicals with bismuth or mercury gets the best results. That is the common practice now followed.

The remarks that Dr. Tomlinson made emphasize not only the matter of the early diagnosis and early treatment, but adequate treatment. That is, of course, where the hitch lies. It requires at least two years—I am not talking

now about congenital syphilis but acquired syphilis in adults—of continuous treatment.

It is of course very difficult to keep patients coming for treatment, especially of the lower ignorant, irresponsible strata of society in which syphilis particularly flourishes. They get a number of injections of some arsenical or some mercury rubs, and then they drop out, and of course the trouble reappears.

There is a regime suggested by the committee of experts of the U. S. Public Health Service, including Stokes, and Schamburg, and Moore, of Johns Hopkins, and a group of those outstanding specialists, and when they can really agree on a regime of that kind it is worth taking into consideration. Their idea is that for a fresh case of syphilis which has remained sero negative at least four courses of arsphenamine, from six to twelve doses to the course, depending upon which drug you use—mercury or bismuth. Of course, bismuth is coming very rapidly into favor instead of mercury.

For a case that has become sero positive, at least five courses of arsphenamine, with mercury. After that, a Wassermann test every one or two months for a year: at the end of the year a thorough physical examination. Spinal puncture, of course, after the second course, say, of arsphenamine, and again at the close of treatment. After the first year, observation, with thorough physical examination and Wassermann test every six months or a year for an indefinite period.

THE INTRAURETHRAL CORRECTION OF URINARY BLADDER NECK OBSTRUCTION*

BRICE S. VALLETT, M. D.
Wilmington, Del.

In the medical world today prostatism is one of the most virile subjects. The term prostatism is used here in a broad sense, and refers to symptoms induced by obstruction at the neck of the urinary bladder. There are two chief reasons for this enlivened interest in an age-old problem; first: because of a recent adjunctive method of treatment; and secondly: on account of the work of Lower and his associates at the Cleveland Clinic on the etiology of prostatic hypertrophy. These workers have approached the problem from the standpoint of an imbalance in the endocrine system.

Anatomy

Lowsley has shown that the prostatic glands arise in five groups, viz: median, posterior, two lateral and anterior. The two lateral make up the bulk of the gland. It is rare for the prostatic tubules proper to become hypertrophied. On the posterior aspect of the urethra between the veru and vesical orifice are found other glands first described by Jores (Young). These glands have been designated "mucosal" glands which arise principally on the lateral and anterior walls of the urethra at the level of the veru but which also are found on the posterior wall in the region of the sphincter. They may also extend up on the trigone. Then there are the "submucosal" glands which run principally in an antero-posterior direction on each side of the urethra and curve around posteriorly to empty into the postero-lateral sulci of the urethra at either side of the veru. It is these suburethral glands from which arise all prostatic hypertrophies as shown by Motz and Perarneau (Young's Urology).

Physiology

Very little is known of the physiology of the prostate. During coitus it has a neuro-muscular function. Apparently, its prime function is the elaboration of a secretion which, with that from the seminal vesicles, gives not only body to the ultimate ejaculate, but has been proven experimentally to be indispensable for fertilization.

The cause of prostatic hyperplasia or hypertrophy is not known. Ewing, of New York, is opposed to the theory of its being a neoplasm on the grounds that the process begins in diffuse or multiple foci, is self-limited and is too orderly. Caulk, of St. Louis, inclines towards the theory of infection, believing that infection may cause either hyperplastic or atrophic changes. In a series of glands removed at the Cleveland Clinic only about one-third showed a growth on culture. These theories seeming untenable to Lower, he and his associates have investigated various factors that might influence the physiological growth and development of the prostate. The following quotations are taken from Lower's recent paper in the *Urologic and Cutaneous Review*, for September, 1932:

*Read before the Medical Society of Delaware, Lewes, September 28, 1932.

"John Hunter pointed out that bilateral castration of young animals prevents development of the prostate, and in mature animals causes the fully developed gland to atrophy. White in 1893 castrated patients with hypertrophy of the prostate and in some cases a good result was obtained but in many an undesirable mental condition led to the abandonment of this procedure.

The normal prostate is a compound tubular gland, with acini embedded in a stroma of involuntary muscle and fibrous tissue. The acini and ducts are lined with tall columnar epithelium, and are usually distended with a homogeneous secretion. Bilateral orchidectomy causes a decrease in the glandular tissue with an increase in the fibrous stroma, the tall columnar epithelium atrophies, the ducts and acini collapse and naturally the secretion diminishes, the gland becoming small, firm, and atrophic. Eunuchs present such a prostate.

They found that vasectomy has no effect on neither gonads, prostate, nor seminal vesicles, but ligation of the spermatic vessels caused a degeneration of interstitial and tubular tissues of the gonads with resulting atrophy of the prostate.

The testes have two functions: one is to produce the germ cells, and the other to provide the male sex hormone which governs the development of all the accessory sexual organs. Moore discovered that after bilateral cryptorchidism the resultant sterility is due to a degeneration of the testicular tubules, although the interstitial cells remain normal.

Artificial cryptorchidism was produced by anchoring both testes inside the peritoneal cavity. In eight weeks there was complete degeneration of spermatogenic tissue with an increase in the interstitial cells and the prostate was enlarged and hyperplastic. From this and similar experiments they conclude that the testicular tubules, germinal epithelium and spermatogonia do not exert a regulatory control over the prostate, but the interstitial cells of the gonads are able to produce sufficient hormone to maintain prostatic growth.

Now the testis in turn is dependent on secretions from the anterior lobe of the hypophysis for its power to provide male hormone.

It has been known for some time that hypopituitarism is associated with retardation in the development of the secondary sex organs and characteristics, whereas hyperpituitarism causes a precocious sexual maturity, and in adults accentuates the established sexual traits. It was found, by the injection of anterior hypophyseal hormone, that stimulation resulted both in immature or mature gonads, with an elaboration of more male sex hormone and resultant prostatic enlargement. The hypophysis has no direct influence over the prostate, but must operate through the testes.

Obliteration of the hypophysis will cause castration changes just as quickly as if the testes themselves were removed. Large injections of anterior pituitary hormone into a normal male rat will produce prostatic enlargement.

In order to have increased prehypophyseal secretion in a castrated animal transferred to a normal animal, an anatomical union was made between two animals so that a permanent opening existed connecting the two peritoneal cavities.

Castrated male rats were twinned with normal males. The prostate and seminal vesicles of the castrate became small and atrophic, and the pituitary gland increased in size. In the normal partner the testes, prostate and seminal vesicles were hypertrophied, the pituitary gland remaining normal.

The excessive prehypophyseal hormone passed from the castrate over into the normal partner, and caused the testes to excrete an excess of male hormone, causing a hypertrophy of the prostate. That the hypophysis of a castrate is hyperfunctioning can be demonstrated by twinning a castrate with a normal female; when the ovaries are stimulated and a protracted estrous cycle, enormous hyperplasia of the horns of the uterus and vagina is produced. The hypophysis becomes hyperfunctioning because (1) when the testes are present they utilize anterior pituitary, but when absent the anterior pituitary secretion circulates unused, or (2) the testes may exert an inhibitory influence on the pituitary and in the absence of testes the gland becomes hyperactive.

Any condition which stimulates the pituitary gland and testes to elaborate an excessive amount of the male sex hormone will result in physiological prostatic hypertrophy.

Various workers have isolated active preparations of male hormone from the urine of

both adult males and from non-pregnant females, from the blood and testicular extract of animals, and the blossom of pussy-willows. These recovered extracts are capable of maintaining normal function of all accessory sex organs in the absence of the testes. It can prevent the prostate of a castrated animal from atrophying, or can restore a small atrophic gland to normal.

A capon receiving injections of male hormone, the comb enlarges and regains its color and all the characteristics of the cock are restored. Lower and his workers have produced physiological enlargement of the prostate by injection of the male sex hormone into animals.

In 150 normal individuals, 270 biological assays were made of blood, urine, and spinal fluid. An active hormone was made from blood, urine, and spinal fluid from both males and females from 4 to 76 years of age. Definite amounts found at 4 years increase at time of puberty; uniform during adult life; diminish during senescence. No hormone was found in eunuchs' blood, urine or spinal fluid. In a series of patients between the ages 70-80 years an excessive amount of hormone was found. These patients were suffering from prostatic hypertrophy. Does the increased production of male hormone over a long period of time, as found in hypertrophied prostates exercise an etiologic function in the production of prostatic enlargement? At the Cleveland Clinic they conclude: that they feel quite sure that the major causative factor in prostatic hypertrophy is an imbalance in the endocrine system, and proper regulation of this mechanism, which we believe can be accomplished by an inhibiting hormone, will give a prophylactic treatment for this affliction."

Since the early part of the 19th century when obstructive lesions at the bladder neck were first described by Guthrie, surgeons have been attacking these obstructions by means of instruments, often crudely designed and poorly adapted for the work they tried to do, thereby causing much suffering, and occasionally death from hemorrhage, and subsequent sloughing, and infection. About 1909 Hugh Young devised his cold punch, and in capable hands this instrument is very useful in removing fibrotic bars, collar formations, congenital valves and other minor obstructions excepting prostatic hypertrophies. The resultant hemorrhage usually following the cold punch is controlled by a large indwelling urethral catheter and irrigation with hot water. We have used this instrument on several occasions to evacuate a suburethral prostatic abscess, it having the advantage of rupture of the abscess by a large urethral sound, due to the fact that by removing a piece of tissue better drainage is thereby afforded the abscess cavity. In 1919 Caulk, of St. Louis, improved the cold punch by adding a cautery attachment, and Caulk today has so perfected his technique that he operates 85% of all types of prostatic obstruction with his cautery punch.

In 1926 Stern, of New York, read a paper before the section of G. U. Surgery, New York Academy of Medicine, in which he described a new cystoscopic instrument employing a cutting current capable of operation in a water medium. This new current was of the high frequency type, and did not cauterize tissue. This instrument he called a resectoscope and with it he was able to remove piecemeal, through the urethra, obstructing bars and contractures, and small prostatic hypertrophies with good results.

Soon after Stern brought out his instrument, Theodore Davis, of Greenville, S. C., experimenting with Stern's resectoscope, set about to improve it. He was successful in this, and also greatly improved the machine that supplied the cutting current, adding a coagulating unit to control hemorrhage. McCarthy, of New York, had also been interested in this problem some years ago, but gave it up at the time because he was unable to find a satisfactory cutting and coagulating current. Recently, in collaboration with Mr. Frederick Wappler, of New York, a suitable current has been developed, McCarthy in the meanwhile also designing a resectoscope. The McCarthy current is of the vacuum tube variety, and uses a DeForrest radio tube.

In January of this year we began to use the McCarthy surgical unit and resectoscope. The results in 20 resected cases are herein briefly discussed. Fifteen of these cases were prostatic hypertrophies, 4 of these being associated with cancer in the gland, and one with bladder stone. One was cancer; one prefibrotic bar; two were fibrotic median bars associated with urethral strictures; one was a contracture of the bladder neck associated with a large bladder diverticulum in a young man of 30 years.

There was a history of acute retention in 12. All but two had varying amounts of residual urine. All cases were put on urethral catheter drainage, with daily bladder irrigation until the blood urea became or approached normal, and the P. S. P. function test was adjudged satisfactory. In the light of final results, and comparing these cases with our requirements for perineal prostatectomy (which operation we favor) it would seem that our results may have been better had we drained these patients longer. In our enthusiasm for this method we have been too hasty to do resection in some cases.

Preliminary cystoscopy was done in most cases, and should always be done to determine the type and location of obstruction and complicating factors, such as bladder stone, tumor, diverticulum, etc. A preliminary evaluation of the cardiac reserve is most important.

We have found a low spinal anesthesia very satisfactory for this work, and employ from 50 to 100 mg of pure novocain crystals, dissolved in 10-15 drops of spinal fluid. By slow reinjection into the spinal canal the anesthetic solution does not diffuse upward, and lately we have not found it necessary to use the Trendelenburg position in the control of blood pressure. The resection is carried out as quickly as is consistent with precise removal of obstructing tissue and control of hemorrhage. We endeavor to have the patient off the table within one hour. In the operation of the resectoscope the tissue is sectioned slowly, as the slow cut coagulates more effectively than the fast cut. It is also often wise to dilate the urethra with sounds before passing the resectoscope which may tear the urethra, thereby causing troublesome bleeding. In the fibrous bars the time need not exceed 20 to 30 minutes. In the larger hypertrophies it often takes an hour to whittle away a good-sized median lobe. We have confined our efforts mostly to removal of obstructions in the midline, as the hypertrophic lateral lobes rarely cause obstruction. McCarthy (Amer. Jour. Surg., March, 1932), and Engel (Jour. Urol. and Cutan. Rev., March, 1932), stress this principle of attack. Davis (Amer. Jour. Surg., June, 1932), who has probably done more resections than any one individual to date, is coming to the view of creating a tunnel and smoothing a pathway from the post-montane declivity to the trigone, where he previously took great pains to remove as much prostatic tissue as possible, often consuming two to three hours in the operation.

In our first two cases, on removal of the urethral catheter (which is placed in the bladder to control post-operative bleeding and afford drainage) the patients were unable to void. These two patients were subjected to perineal prostatectomy one week later; however, this has not happened in any of our subsequent cases.

Seven cases of epididymitis developed—two in the cases that had perineal prostatectomy following resection, one in a case in which a bladder stone was crushed, followed by resection. One developed this complication one month following operation. One badly infected prostate, possibly of the prefibrotic type (spoken of as a contra-indicated type by McCarthy (Jour. Urol., Feb., 1932) developed bilateral epididymitis, and had a stormy and painful convalescence. Two mild cases developed in two patients with moderate hypertrophies. Two of the cases of epididymitis suppurated, and epididymotomy was necessary. Transient incontinence occurred in two cases.

Post-operative hemorrhage was conspicuous in two of the cancer cases, but was controlled by a large indwelling urethral catheter. These were early cases, and as we have become more familiar with the method hemorrhage has become less annoying and generally more easily controlled. The operator strives to have the return flow through the urethral catheter clear at the termination of the operation, although too little coagulation is to be preferred to overcoagulation.

An acute exacerbation of a chronic pyelonephritis has been noted post-operatively in several of our cases, but none have developed the small multiple kidney abscesses spoken of by Day (Urol. and Cutan. Rev., March, 1932). However, we agree with him that this is a real and not unlikely complication. Infection is undoubtedly this method's greatest enemy. For this reason we cannot agree with Engel, who says that "these cases do not require the prolonged preoperative preparation necessary for open operation."

Results

Ten cases averaged 6½ days in the hospital. Five of these were fairly large prostates, graded II and III, and none had any residual 6 and

8 months following resection. Several of the cases have been cystoscoped subsequently, and the resected pathway is easily detected and seen to be covered with healthy epithelium.

There was one immediate death, a case of advanced cancer of the prostate. His blood chemistry and P. S. P. were considered good before operation, but he developed a urethral chill and died a cardiac death 24 hours following operation. There were 3 hospital deaths in all. Another advanced carcinoma of the prostate had weathered his resection and was sitting up in bed on his fifth post-operative day talking to a son, when he had a coronary attack and died within a few minutes.

The third death was in a large hypertrophy whom we had previously refused to resect due to his feeble condition. We finally resected a very small amount of tissue from his middle lobe, but he died about one week later from chronic myocarditis and chronic nephritis. He was able to void up until the time of his death. A very small amount of tissue removed will often afford relief from obstruction and residual urine. We have observed this in several of our cases, and to date it has not been necessary to re-resect these cases. In one case 6 months later six ounces of residual urine was found, but we believe that there is a complicating organic nervous factor responsible in this case, as the patient had paresthesia of the legs and feet before operation. The remaining 7 patients were detained in the hospital for a longer period due to the following respective causes: Uremia, feebleness from old age; epididymitis; and acute prostatitis.

The mortality in this small series is quite high, but not one of these deceased cases would have been considered fit for perineal prostatectomy. It is our belief that intraurethral resection will in most operators' hands have as large if not a larger mortality rate than open operation, the reason being that more men will submit to this procedure than to open operation; and again, cases will be subjected to this method upon whom the urologist would not consent to do an open operation. The fact that the sexual function is much less apt to be disturbed by resection will give popularity to this procedure also.

There are cases in our series upon whom we believe perineal prostatectomy would have been the better operation, as this latter operation removes all of the hyperplasia, and above all provides "ideal drainage," the one thorn in the side of intraurethral resection on account of poor post-operative drainage. As epididymitis has been a prominent complication in our series, we plan to do vasectomy in all of our future cases. In carcinoma of the prostate intraurethral resection is the operation of choice today as it relieves the obstruction, controls hemorrhage, and in the experience of Davis actually causes a regression of the cancerous process. Radium and deep x-ray are valuable adjuncts to resection.

Conclusions and Summary

1. Twenty resected cases are reported, and the early results reviewed.

2. The etiology and treatment of prostatism is one of the most engaging problems of the hour.

3. Intraurethral resection of bladder neck obstructions is undergoing a thorough trial. This impetus of sudden interest and activity is largely due to the efforts of Davis.

4. In our opinion the technique of resection, as now practiced according to McCarthy and Davis, is undoubtedly the most valuable adjunctive treatment in prostatism since Hugh Young gave us his classical perineal operation.

5. The method greatly shortens hospitalization in the average case, and is the method of choice in many poor risks.

6. Infection and not hemorrhage is the bugbear of intraurethral resection, and must be combatted by vasectomy and a meticulous bladder toilet before operation.

7. The same pre-operative care as for open operation should be given.

8. Intraurethral resection is the operation of choice in carcinoma of the prostate, relieving obstruction, controlling hemorrhage, and causing retardation and regression of the growth.

9. Intraurethral resection is less likely than open operation to disturb the sexual function, and for this reason will maintain its popularity.

10. Intraurethral resection will have a mortality rate as high or higher than the open operation, due to the fact that many more men will submit to it than to open operation, many of them poor risks, but for many of these same poor risks this method will prove curative.

11. Physical examination of all men over 45 is not complete without the test for residual urine.

12. In the final solution of the problem of prostatism, prophylaxis will play a major part, viz: by early detection of cases, and, again quoting Lower, possibly by the administration of an inhibiting hormone.

DISCUSSION

DR. G. W. K. FORREST (Wilmington): I am not conversant with this procedure, but I would like to have information as to whether or not in selective cases those have enlargement of the central lobe?

DR. VALLETT: You can resect with this method lateral lobe hypertrophy as well as the middle lobe, but the middle lobe is the important one to get. We often find, in the large hypertrophy, that if we just resect the middle lobe the patient will be able to void and have no residual urine.

PRESIDENT HOCKER: Any other discussion on Dr. Vallett's paper?

DR. PETER W. TOMLINSON (Wilmington): Mr. President, Dr. Vallett has not stated what his charges are for these operations. That is a question the outsiders sometimes inquire about. Some years ago, when the late Dr. Burton and I were on our way to Dallas for a meeting of the American Medical Association, we got in conversation with a gentleman on the train as we were going through the State of Indiana. He got off at Richmond. After he left the conductor told me he was the largest grower of roses in the United States.

In my conversation with him I remarked that I had a rather elderly traveling companion. I said he was 81. He said, "How old am I?" I said, "You are about 70." He said, "I am 81." He was just returning from Florida where he had been spending the winter.

This man said, "I had a rather serious operation two years ago. I had often heard of Dr. Gibb, of Chicago. I went out to see him, and he soon told me that he was not the man I wanted to see, that I needed a surgeon, he was an internist. He called a surgeon on the phone. He told him he had a patient there from Richmond, Indiana, and he would like to have him come to the hospital the next day at ten o'clock and put him in his hands. I was operated on there, and made a very satisfactory recovery."

I said, "You were agreeably disappointed in the rapid recovery, and also in the bill."

"Oh, no," he said, "Not so much in the bill, but I didn't kick as did a friend of mine ten years my junior who went down to Dr. Hugh Young and had him do a similar operation—prostatectomy. When this patient had sufficiently recovered to be told that he could be returned to his home he said, 'Dr. Young, I would like to have your bill.' Young said, 'Oh, that will come along in a month's time.' The man said, 'That is not my way of doing business. You can tell me as well today as you can tell me in a month from now what your charge is.'

" 'Well, it is $2500.' " (I don't know whether Dr. Vallett is getting any such fees as that.) "At first the patient thought he was joking. Young said, 'No, I am not joking. We have to operate on many a poor fellow and give him the same attention we gave you. When we get hold of one of you gentlemen who have accumulated your pile you have to help make up for the poor fellow.'

"He was very much incensed. He sat down and made out his check and handed it to Dr. Young. He said, 'Doctor, in bidding you goodbye I have one request to make of you. I want you to add a codicil to your will, and I want you to name me as one of your pallbearers, and I hope I will have to act damn soon afterward.' " (Laughter)

PRESIDENT HOCKER: Is there any other discussion on Dr. Vallett's paper? If there is no other discussion, Dr. Vallett, do you have anything to say in conclusion?

DR. VALLETT: I don't know of anything to add to what we have already stated.

Toxemias of Pregnancy: I. Some Observations of Hepatic Factor

ALLAN WINTER ROWE, Boston (*Journal A. M. A.*, December 17, 1932), compared certain laboratory and clinical observations arising from the study of forty women referred for toxic pregnancy, with similar data from a series of normal pregnant women and also with a like group not pregnant but having well-established hepatic dysfunction. Evidences of disturbed function of the liver were found in many, but not all, of the toxic series.

ETHICS OF PUBLICITY

Principles Governing Contact of Physicians With the Public Through the Press, Lecture Platform, Lay Periodicals, and the Radio.

The present tendencies in social and economic life have made it desirable that the medical profession, both as an aggregate body and through its individual members, should become more articulate in its relation to the public.

However, this being something of a departure, it is necessary that a working set of principles be formulated to guide physicians in their public contact with the community, to the end that the best interests of the community be served and that ethics be not violated.

In considering the common avenues through which the profession and individual physicians may address the public, namely the press, the radio, the public platform and popular publications, we find three possible types of approach. These are publicity, propaganda, and public health education.

PUBLICITY we witness in the medical world under two aspects. In one it gives due public notice of events which constitute legitimate news, such for example as the election of new officers in a medical organization; the opening of a new hospital; the award of a prize for distinction in medicine and the like. Such publicity is legitimate and desirable, and the use of a physician's name in this connection is not reprehensible.

There is, however, another form of publicity unfortunately employed by a small section of the medical world, which has for its aim the exploitation or advertisement of an individual through mention of his name in the public press.

In such publicity, the comings and goings of the individual are featured, his connections, achievements and honors are mentioned and he is thereby deliberately and often without any warrant given undue prominence in the public eye. This form of publicity is objectionable, because its aim is reprehensible and the effect upon the public and upon the profession will be deleterious. This type of publicity among physicians cannot be countenanced.

PROPAGANDA has for its main objectives the arousing of public interest in supporting and acting on health matters.

In propaganda, emphasis is placed on some matter of public health interest and only incidentally upon the physicians connected with it. Tuberculosis prevention, cancer control, diphtheria prevention are legitimate public health items for propaganda. The appearance of physicians' names in connection with such agitations is by the exigencies of press practices necessary and allowable.

PUBLIC HEALTH EDUCATION differs from publicity and propaganda by the nature of its content. A statement, for example, that measles is a much neglected and dangerous disease, made by Dr. Jones, may serve as a typical example of a public health education message. Such a statement should not give special prominence to its maker. On the other hand, the statement is given impressiveness and authoritativeness when emanating from a representative physician or from an official medical body. Such a physician speaks not for himself but for the profession. He serves merely as the mouthpiece through which is expressed a fact universally agreed upon by physicians.

RADIO BROADCASTING presents a number of singular problems which need individual consideration. It is highly desirable that the medical profession should take advantage of the opportunities for constructive propaganda and for health education presented by the radio. And yet the radio is a medium in which the personality of the speaker, understood in its widest implications, counts for much. Anonymity on the radio is, therefore, incongruous. A physician making an address on the radio must of necessity be introduced by name. More than that, to establish his right to speak his standing or connections, educational or associational, must be given.

All of these requirements can be fulfilled without violence to good taste or ethical procedure. The speaker's name may be given by the announcer without adorning and superlative references to his abilities or achievements. Dr. John Jones, clinical professor of medicine at the X. Y. Z. University, will suffice as an introduction. Dr. John Jones, who is a practicing physician, should not be introduced as an internationally famous authority, etc.

In the body of the radio paper, references to the person of the speaker, his singular achievements, unique and outstanding practices, should be kept down to an absolute minimum. In the-

ory, the physician speaking on the radio is the vocal representative of the medical profession addressing the public. He brings to the public the fruits of many men's labors. In this, he is the custodian and administrator of the wealth accumulated by the scientific endeavors of the profession. His personal interests, and individual convictions must be placed secondary to the interests and dominant convictions of the profession. There are proper channels provided for the advancement of a physician's medical ideas.

It is desirable that talks over the radio by physicians should be given under the auspices of the designated committees of the New York Academy of Medicine and of the Medical Society of the County of New York*

Commercial organizations may purchase time "on the air" with increasing frequency in order to procure good will, and use it for broadcasting public health information. Frequently, physicians are employed to compose and deliver such broadcasts.

Provided that the commercial organization is of reputable standing, there is no objection to physicians accepting such employment. A physician must not, however, make his address an endorsement or testimonial for the product or products of the organization on whose time the broadcast is given.

In order to safeguard himself and the profession, when such employment is offered him, a physician should confer with the Medical Information Bureau, both as to the standing of the commercial organization with which he is to make a connection and the contents of the paper or papers he proposes to broadcast.

It is also important that the announcer's continuity should be acceptable. No exaggerated or unwarranted claims should be allowed, nor should the announcer be permitted to imply that the speaker endorses the commercial organization or its product.

MAGAZINES AND PERIODICALS: Articles written by physicians for magazines on medical topics affecting the profession should be subject to pre-publication review by the local medical organization.

*The Medical Information Bureau. (In Wilmington: The Public Relations Committee.)

SUMMARY: The full intent of these considerations is to facilitate and in no way to hamper educational contact of the profession with the public. They are designed to encourage the expression of the views of the profession to the public. They provide against objectionable publicity by self-seeking individuals whose only design is to aggrandize their persons beyond all merit.

They are formulated for the protection of the public, and for the advancement of the basic interest of the profession by whose progress or regression we all are fundamentally affected.

American College of Physicians

Announcement has been made that the American College of Physicians will hold its Seventeenth Annual Clinical Session at Montreal, with headquarters at the Windsor Hotel, February 6-10, 1933.

Dr. Francis M. Pottenger, of Monrovia, Calif., as president of the college, has charge of the program of General Sessions. Dr. Jonathan C. Meakins, professor of Medicine and Director of the Department, McGill University Faculty of Medicine, is general chairman of local arrangements and in charge of the program of Clinics. Mr. E. R. Loveland, executive secretary, 133-135 S. 36th Street, Philadelphia, Pa., is in charge of general business arrangements, and may be addressed concerning any feature of the forthcoming session, including copies of the program.

American Board of Obstetrics and Gynecology

The American Board of Obstetrics and Gynecology will hold its next written examination and review of case histories will be held in cities throughout this country and Canada, where there are Diplomates who may be empowered to conduct the examination, on April 1, 1933.

The next general clinical examination is to be held in Milwaukee on Tuesday, June 13, 1933, immediately preceding the annual session of the American Medical Association. Reduced railroad rates will apply.

For further information and application blanks, address the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pa.

The President's Page

To the Members of the Medical Society of Delaware:

As we enter the year nineteen hundred and thirty-three, the medical profession is confronted by several problems, which if not taken into consideration very seriously by us, will change the entire aspect of the practice of medicine and surgery.

These problems are fostered in most instances by those outside the profession, and while they have in mind the idea that they are doing something which will help the people as a whole, they are in many instances incorrectly informed. There are many of these problems that are becoming active now, and unless they are stopped we will have state medicine upon us before we can prevent it.

The day of the old family physician has gone, and the medical profession is looked upon by most of these misled people as they look upon their servants. Welfare organizations have stepped far beyond their field in their attempt to increase their work. The economic condition of the country today is undoubtedly somewhat responsible for this, but there are at this time many people taking advantage of this condition and securing help which they are not entitled to. Take any of the clinics in the hospitals in Wilmington, and you will see well-dressed people come to those clinics driving their own automobiles, receiving free treatment.

There is not a physician, if he is a physician in the true sense of the word, who will not help the indigent gladly, and right here I may ask: "Who are the indigent?" and: "who shall say that they are indigent?" Are the doctors willing to see their patients going to a free clinic, knowing that they may get into the habit and never return to them? Are the doctors going to run these clinics and have their own patients come to them there, instead of to the doctors' offices? Are the doctors willing to accept the other person's idea of an indigent, when they, the doctors, know this is not the case? These questions were all discussed at a special meeting of the House of Delegates in Dover on January 4th, and the following arrived at:

First: That the indigency for medical care be proved by the family physician, to his own satisfaction.

Second: That the family doctor be the one to dispose of the case as he sees fit; by that we mean whether he treats the case at his office or sends it to a clinic.

Third: That a Bill be introduced to provide funds for payment to the individual doctors for treatment of indigent cases, these funds to be handled by the State Board of Health.

The policy of your President during the present year will be, first, to enforce our Medical Practice Act. This Act is second to none for the protection of the people and the doctors as well. We do not need any changes in this Act, and if we as a Society will back it up, it will work to the advantage of everyone. I advise you, as members of the Society, to familiarize yourself with it. Copies may be had by requesting them from Dr. Jost, of the State Board of Health. Second, to teach the people that we are safeguarding their interests. Third, to keep the interest of the Society alive by frequent committee meetings, and as you will see from the appointments in this issue I have tried to put as great a number as possible on the committees. The appointments on these committees were made with the idea that those appointed would work, and before the end of the year would be able to show results. Fourth, to keep the standards of the profession on the present high plane, and to carry out the suggestions of the Committee on Medical Education for this purpose.

After you have read and studied the Medical Practice Act, you will more easily recognize the instances where it is broken, and if you will inform the secretary proper action will be taken. Already action along this line has been started. Let me impress upon you the necessity of this Society acting in unison. Many of us have certain ideas, concerning a great many things, and those ideas expressed may be taken by others to be the expressed opinion of the State Society. What your President wants is that all expressions of this sort come from the official body, and with their approval, and there is no doubt in my mind, if this policy is adhered to, we can obtain all of the legislation which we can prove is for the good of the people.

Sincerely,

WILLIAM H. SPEER, M. D.

EDITORIAL

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TECHNOCRACY, SOCIAL TRENDS, AND MEDICINE

Read, first, the following comments on Technocracy, taken from *Time*, December 26, 1932:

Just when the country was most despairing of being run by an engineer in the White House, there emerged in New York a movement, a new "ism," to have the country run by all its 300,000 engineers and technical experts. Technocracy was the new "ism's" name and its proponents styled themselves Technocrats. Headquartered at Columbia University they announced that, employing three dozen unemployed engineers, architects and draftsmen, they were conducting an "Energy Survey of North America." Startling was their array of statements about technological unemployment, mankind's machines destroying mankind's chance to earn a living "under the present price system." As preliminary fireworks they expounded such statistics as these:

Total capacity of U. S. industrial equipment is one billion horsepower, which does the work of ten billion men, or five times the earth's total population.

On the basis of 1830 methods, six million men would have been needed to cultivate the soil for the 1929 U. S. wheat crop. With the best existent equipment 4,000 men could have planted the whole crop.

If every structure on Manhattan Island were destroyed and the entire community rebuilt with the latest inventions, the re-construction would pay for itself in 20 years.

A new machine for making light bulbs produces 442 bulbs a minute, replaces 10,000 men.

Such statistics are not new. The late Thorstein Veblen (1857-1929) recited similarly as early as 1921 when he published *The Engineers & The Price System*. Economist Stuart Chase, Veblen's friend, has been writing similarly since. But last summer a tall, middle-aged man named Howard Scott with a wide-brimmed hat and a prodigiously rapid, sharp, agile tongue, was being received and handed around by alert tycoons, notably Banker Frank Arthur Vanderlip. From one drawing-room and dinner to another he moved, everywhere causing gasps of amazement, scowls of worry, questions of deep and inquiring respect.

Two years ago Walter Rautenstrauch, professor of industrial engineering at Columbia University and *extra curricula* a commercial industrialist, gave Howard Scott a room at Columbia, told him to put the Techno-social ideas on record.

To theorists like Messrs. Rautenstrauch, Jones, Ackerman and Chase, Technocracy is a serious effort to collate facts which may show whither industrial civilization is moving. To thousands of discontented technicians employed (or discharged) by oil, lumber, automotive and other industries whose wealthy they envy, Technocracy is the hope of a new economic deal. To I. W. W. 's, with whom Howard Scott was once associated, Technocracy is a new lever against Capitalism. Each man sees in Technocracy what he wishes for and Howard Scott, Technocracy's spokesman, breathes fog upon their mirrors.

Technocracy presumes that all the wealth and functions of society can be calculated in terms of energy unity—British Thermal Units, kilogramme calories, joules, ergs, footpounds, horsepower. Upon that presumption was started the "Energy Survey of North America," in which one man's time for eight hours is considered equal to 1,500,000 foot-pounds. Technocracy headquarters, which now has few cartographers at work, has energy charts of about 50 U. S. industries ready for display, talks about 300 charts too significant for revelation, promises 3,000 charts eventually.

The charts, say the Technocrats, show or will show that the present price system will not work. What will work is a world managed by Technocrats wherein everyone does an equal and rather small amount of work (say 12½ hours a week for 20 years) and enjoys an equal and very large income—in goods provided by the state or obtained by an exchange of "erg" tokens.

How this transformation from dollar economy to energy economy is to come about, Howard Scott never explains. Says he at times: "Technocracy proposes no solution." At other times he silences questions with a pontifical belch.

The point to all this is that here, again, we see a single special group in the country telling all the other groups just what is wrong, and

just (?) how to right matters. As to this particular "ism," Technocracy—literally, government by machine—the really serious thinkers of America almost unitedly smile in disdain—some, such as the famous engineering vice-president of the General Motors Corporation, openly say "bunk," or its equivalent. The Technocrats forget two fundamentals which would ruin their pet scheme: (1) man's desires change; and (2) man's inventive genius is not yet dead. How reminiscent of the propaganda recently publicized by certain sociologists (and a few physicians) about medical care and its costs is all this hubbub about Technocracy! But keep in mind always the rock-bottom fact that the whole world is in a state of flux; that conditions in all walks of life, everywhere, are far from satisfactory; that selfishness and self-exploitation are omnipresent human frailties; and you will come to understand something about these Technocrats and their "ism," you will realize that the criticisms against the medical profession are not especially particular, but rather a mere symptom of a general dissatisfaction; and you will discover that the physician, far from being an aloof profiteer, is your altruistic friend and neighbor.

To corroborate our own viewpoint, now comes the report of President Hoover's Research Committee on Social Trends, just released after a careful and painstaking study of three years. No report in recent years seems founded on better facts, or steeped with more common sense. (It happens, by the way, to have been financed by the Rockefeller Foundation). The full report, which is the work of over 500 investigators, fills two volumes of 1568 pages, and is supplemented by 13 monographs. As pertains to the medical profession and public health, it states, primarily, that medical organization has not changed as rapidly as scientific medical research, that there is an uneven distribution of physicians, comparing rural with urban populations, with accompanying hardships to both people and profession; and that the total cost of medical care (of which the doctor receives only 30 per cent) is perhaps not too high, and totals approximately $3,500,000,000 a year. "But a considerably larger amount in the aggregate was spent in that year (1929) for pleasures, such as tobacco, toilet articles, candy, chewing gum, soft drinks, and for motion pictures." In the light of such facts, the hue and cry of some of our disinterested (?) Foundations about the high costs of medical care pales into insignificance, and the doctor appears as something like his real self—a public benefactor.

This report, which is strictly fact-finding and contains no specific recommendations, bares the facts that our life has become disjointed and upset because the flow of credit is not synchronized with the flow of production; that machines are dislocating labor; that we devote far more attention to making money than to spending it; and that the church and family have declined in social significance; and yet, in the midst of this terrific indictment against the national trends at large, the medical profession is, relatively, given a very clean bill of health.

We thank God for these few kind words; they will go far towards ameliorating the hurt inflicted by recent previous reports, the chief connotation of which has been that medicine has become a somewhat backward profession, almost devoid of social interest and advancement. On the contrary, we maintain the thesis that the medical profession has more than kept its place in the march of modern civilization, and that, further, more than any other group in our midst it has projected itself into the future, and provided that vision without which, according to Holy Writ, the people shall perish.

In conclusion, rating one report against another, balancing charges of collective insufficiency against collective proficiency; and comparing medical individualism with medical socialism, let this be our slogan:

The American medical profession will be sovietized only if and when it permits itself to be sovietized.

THE LEGISLATIVE PROGRAM

The House of Delegates of the Medical Society of Delaware, at its last regular session at Lewes in September, and at a special meeting in January, at Dover, has referred to its Legislative Committee the following program:

1. A bill to secure to the physician equal rights with the undertaker in the estates of deceased persons.

2. A bill to provide statutory recognition of privileged communications, as between physician and patient.

3. An amendment to the $2,000,000 Relief Bill to provide for medical care and hospitalization.

4. The osteopathic bill, establishing new standards for osteopathy.

5. A unanimous decision not to favor the establishment of any new clinics, at present.

The Legislative Committee, under the chairmanship of Dr. J. D. Niles, of Townsend, is a capable one, and we entertain no doubts as to its industry, but we would caution each member of this Society to be alive to the issues involved, and to assist the Committee whenever called upon to do so.

Only by united and collective action can the Committee accomplish the tasks assigned to it. The legislative program this year is not as full as that which will be offered to the legislature in 1935, but even so, this year's program will require much work on the part of the Legislative Committee, and the full support of the Society's membership. Each member should see that, when called upon, he does his full duty to the Society.

EDITORIAL NOTES

DEAR DOCTOR:

THE JOURNAL and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely *free* to you.

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Perhaps you want a certain kind of instrument which is not advertised in THE JOURNAL, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages, but if they are not, we urge you to ask THE JOURNAL about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want THE JOURNAL to serve *you*.

On January 17th the New Castle County Medical Society met for its first regular meeting at the new building of the Delaware Academy of Medicine. Despite the fact that this Academy, composed of certain members of the County Society, was inaugurated without proper authorization by the regular medical organization, it will nevertheless soon gain title to a building which has a certain historical value, and certain housing facilities for the County Society, and a future library, which are superior to any which we have hitherto known, and we predict that any feelings which the irregular origin of this Academy may have engendered will be speedily lost in general enjoyment of the facilities which are now offered. If, as is anticipated, this Academy building is to become the regular home of the County Medical Society, we bespeak for it the fullest utilization by our members, and we especially urge upon them the value of the library, the privileges of which will cost each member only ten dollars per year; and it ought to be worth many times that price per year. It is hoped that the upkeep of the building, estimated at $5,000 a year, may be met by legislative appropriation.

The American Medical Association has made no ruling, through its Board of Trustees or its Judicial Council, concerning the ethics of medical publicity, as almost demanded by our modern accessories, the press and the radio. In its stead, however, we have the new Code of the New York Academy of Medicine, now almost one year old, which has unofficially been approved by the A. M. A. in the editorial columns of the *Journal of the A. M. A.* Hence, until the Judicial Council rules otherwise, the New York Code becomes the official Code of American medicine, and we reprint it in this issue of our JOURNAL, since the newer activities of our State Committees on Medical Economics, on Public Relations, and on Cancer will most likely involve frequent, direct appeals to the general public. Please read this new Code, make it your official guide, and abide accordingly; otherwise you may face charges of unethical conduct.

We are printing in this issue the new Directory Page for 1933. That it is without error is almost too much to expect, but where error is detected, please advise us at once.

Says one editor to another: We are glad to see the merger of the Wilmington *Every Evening* with the *Evening Journal*. Many powerful motives are back of this maneuver, and the fused twins ought to have more vitality than either one alone. We cannot forget, however, the comment of a local advertising man, to the effect that "this merger may mean, later on, the entrance into the Wilmington field of the Scripps-Howard chain, and if this happens, it's just going to be too bad." The connotation is perfectly plain, yet our bets are on the Wilmington

group, with Mr. George Carter at its head. Here's luck to them.

Mr. George A. Pedrick, coroner for New Castle County, announces the appointment of Mr. James F. Hearn as deputy coroner for the years 1933-34. Mr. Hearn succeeds to the well-established undertaking firm of George M. Fisher, Inc., and will have a new city morgue at 100 East Eighth Street in a short time. We wish him every success in his new office, and anticipate that he will discharge his duties to the satisfaction of the medical profession, and to that of the hospitals, which must show autopsies on 15 per cent of all of their deaths to secure scientific approval by the A. M. A. We have reason to believe that Mr. Hearn will co-operate fully in the efforts of all our hospitals in maintaining fully the scientific requirements imposed.

Do you read THE JOURNAL? We are not sufficiently egotistical to care so very much whether you read our editorials and editorial notes or not, even though you may occasionally learn therein something you did not previously know, but do you read THE JOURNAL for its scientific and economic value to you? If not, we urge you to begin the new year with the fixed habit of knowing what THE JOURNAL contains.

WOMAN'S AUXILIARY

It is a month since our last meeting, a month until our next one, and it is my very great desire to try to have that meeting a banner one, with as many present as possible. The meeting will be in Wilmington, on February 14, and our honor guest will be Mrs. W. Wayne Babcock. Tea will be served, and an inspiring start for the New Year will be made.

The third object of the Woman's Auxiliary to the American Medical Association is "to promote acquaintanceship among physicians' families, that fellowship may increase." I think that there is no doubt that we have gone far on that pathway in our three years of existence; where, in general, before that time, only the men knew each other, now we doctors' wives meet together with greatest pleasure. We know far more of the common joys and problems of the profession, and we share their feeling of pride in the honor of this great calling. We have learned much of the insidious attacks upon it by cults and quacks, and in our quiet way are doing our bit to expose their deceptive methods. We have tried to promote health talks and periodic health examinations. We have promoted the sale of *Hygeia*, the official publication of the American Medical Association for public information.

We have done many other things, too, and now we are turning our faces forward. Mrs. Wagner is heading a group of our women who are sewing every Tuesday morning at the Delaware Hospital. The little wrappers and dresses made at this time are given to the Visiting Nurses' Association, to distribute among the new-born babies in their care. Won't you do your bit to help this work along? Mrs. Burns is making a list of doctors' wives eligible for the Auxiliary who have not joined, and we are going to try to let them share our pleasures with us.

Let me remind you that the Women's Joint Legislative Committee meets every Thursday morning, at eleven, in the Baptist Church, at Dover. Won't all of you try to attend some of these meetings? If you are a delegate or an alternate, please make a point of attending.

May I wish you all a very Happy and Prosperous New Year? You have always my deep and unfailing gratitude for your friendship and co-operation, and I can assure you that my appreciation grows deeper as time goes on.

MRS. ROBERT W. TOMLINSON
President

MISCELLANEOUS

Columbia University Patents Vitamin D Product

A plan for the eradication of infantile rickets, a very common disease in its milder forms, has been developed at Columbia University and is being placed into operation in several cities, according to a statement by Dr. Theodore F. Zucker, of the College of Physicians and Surgeons, Columbia University, in an address which he made before a recent meeting of the New York Chapter of the American Institute of Chemists.

This plan is based on a process worked out by Dr. Zucker for concentrating the vitamin D content of cod-liver oil in a solution which can be added to bread and milk. If the use of these common foods so treated becomes general, Dr. Zucker said, rickets will vanish as a public health menace because vitamin D is known to be a preventive of this disease.

In order to administer this discovery for the general good, it was patented and the patent assigned to University Patents, Inc., a board set up by Columbia University, Dr. Zucker explained. A license to manufacture and distribute the concentrate was granted the National Oil Products Company, of Harrison, N. J., which in turn sub-licenses bakeries and dairies to use the concentrate in their products. The University exercises strict supervision over the manufacture, application, and promotion of the concentrate, the prices charged for the products containing it, and otherwise safeguards the public interest. It devotes the royalties received to research work.

"Infantile scurvy was once a widely prevalent disease," said Dr. Zucker in discussing the subject of vitamin research and public health, "but it is now nearly unknown except in very ignorant or highly destitute surroundings. It was overcome through the recognition that the cause of the disease is lack of vitamin C, and that this vitamin can be administered through the use of orange or tomato juice. In a similar way, rickets can be eliminated by the administration of vitamin D."

Dr. Zucker described the process by which he extracted the vitamin D content from cod-liver oil and concentrated it in a solution that is 1000 times more potent in this rickets-preventing factor than the original oil, and that can be added to various foods without affecting their flavor. The efficiency of the concentrate in curing rachitic children has been shown by tests that have been made in the children's clinic of the Bellevue Hospital, the Children's Hospital at Detroit, and several other health centers, he said.

"There are other ways of supplying vitamin D through the diet," he pointed out, "such as by irradiating milk by means of ultra-violet light. But the use of the natural vitamin D concentrate of cod-liver oil provides a means of making available and putting within reach of everyone articles of every-day food which will serve as a rickets-preventive for infants, and a regulator of mineral metabolism for the growing young. We have high hopes that through this modest contribution of ours we can aid in the task of eradicating rickets."

Merck & Co., Inc., to Expand Research Work

Merck & Co., Inc., recently announced the appointment of Dr. Hans Molitor, of the University of Vienna, to the research staff of the company. Dr. Molitor will assume the direction of research work in pharmacology. In announcing the appointment, Mr. Merck stated:

"The addition of Dr. Hans Molitor, of Vienna, to the staff of Merck & Co., Inc., results from the decision of the management to adopt a policy of intensive research in pure and applied chemistry and allied subjects. To provide adequate facilities for this research work, Merck & Co., Inc., despite the depression is constructing at Rahway, N. J., at the present time, a research laboratory to cost in excess of $200,000, which will house a staff of 25 research chemists. Dr. Molitor will take over the supervision of the details of equipping and staffing the laboratory to be devoted to research in pharmacology.

"Dr. Molitor comes to this country with a background of scientific accomplishment in the universities and hospitals of Europe. Born in 1895, in Austria, he took up his studies in the University of Vienna under the faculty of medicine, in 1913, receiving his Doctor of Medicine degree in 1921.

"During the last year of the war, he did a considerable amount of outstanding bacteriological work, and following it he was an interne in the clinic of Professor Chvostek in Vienna. During the years 1919, 1920 and 1921 he was an interne in surgery and gynecology, and in the eye section of the hospital at Reichenberg.

"From September, 1921, to September, 1923, he was an assistant in the Department of Pharmacology in the University of Vienna, later receiving a stipend from the Rockefeller Foundation, and studied in the University of Edinburgh under Prof. Barger and worked in phar-

macology under Prof. Cushny, of that institution.

"Following his studies in Scotland he also spent some time in Cambridge, London, and Utrecht, returning in 1924 to Vienna to the faculty of the university, where he continued his work in pharmacology until June, 1931, when he was made Extraordinary Professor of Pharmacology in that university.

"Dr. Molitor has published a number of reports under his own name and jointly with his colleagues, on various topics associated with pharmacological research work."

BOOK REVIEWS

Radiologic Maxims. By Harold Swanberg, M. D., Editor, Radiological Review. Pp. 126. Cloth. Price, $1.50. Quincy, Illinois: Radiological Review Publishing Company, 1932.

The little book by Swanberg is a compilation from books reviewed and from magazine articles, and no claim for originality is made by the author.

There is a fairly general lack of knowledge in the medical profession as to what the radiologist can and cannot be expected to do. This is largely due to the fact that this is the youngest specialty in the profession. That he may render the highest type of service to his patient the general practitioner could well read this little book with profit and pleasure.

The author in his maxims has repeatedly stated both directly and indirectly that a radiologist is a member of the profession and should be considered a consultant. This co-operation by members of the regular profession will help to maintain the dignity and standing of radiology as a specialty; the patient should be given to understand that he is a specialist and not a glorified photographer.

The author also calls attention in very pointed language to x-ray examinations of fractures as now considered, the ordinary care and attention which every physician should give. Also, that juries are awarding damages to patients in fracture cases when physicians have neglected to have roentgenograms made. The following maxim states an x-ray examination of fractures is the best insurance against malpractice. The absence of roentgen examination of fracture is, per se, basis for a malpractice suit.

Several maxims have been compiled on prevention of malpractice suits. One of these advises to refrain from making remarks about another doctor's work. Without doubt, the maxim quotes, this is a common source of instigating malpractice suits, yet most such remarks are thoughtlessly made. If physicians are not fair with one another or are knowingly injuring each other by some damaging remark or act, can it be expected that the laity will be more considerate?

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